

SET OF CLAIMS

1. A method for purifying air for fuel cells, wherein the starting air is passed through an adsorber with an adsorbent of carbon dioxide, then the adsorbent is regenerated by heating, characterized in that an adsorbent is used in the adsorber, the adsorbent comprising hydrated oxides of transition metals which are regenerated at a temperature of 60 – 120°C by the air spent in a fuel cell.
2. The method for purifying air for fuel cells according to claim 1, characterized in that air fed for regeneration is heated until a relative humidity of from 15 to 85% is achieved.
3. A device for purifying air for fuel cells, comprising an air flow blower connected by means of pipelines and a stop valve to adsorbers provided with an adsorbent of carbon dioxide and connected to an air inlet of a fuel cell, characterized in that the stop valve is made in the form of switches that provide for the sequential connection of the inlet and outlet of one of the adsorbers to the air flow blower and to the air inlet of the fuel cell respectively, and the outlet of the other adsorber through a heater to the air outlet of the fuel cell.
4. A device for purifying air for fuel cells, comprising an air flow blower, connected by means of pipelines to adsorbers provided with an adsorbent of carbon dioxide and connected to an air inlet of a fuel cell, characterized in that the adsorbers, separated one from another by partitions, are positioned in one housing with the possibility of rotating about a longitudinal axis and sequentially connecting at an inlet to the air flow blower and at an outlet through a heater to an air outlet of the fuel cell.
5. The device for purifying air for fuel cells according to claim 3 or claim 4, characterized in that the adsorbers are provided with an adsorbent containing hydrated oxides of zirconium.
6. The device for purifying air for fuel cells according to claim 3 or claim 4, characterized in that thermal insulation is arranged inside the adsorbers and heaters.